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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,773	01/23/2002	Yoshiie Matsumoto	2002_0062A	4212

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EXAMINER

DUONG, THOI V

ART UNIT PAPER NUMBER

2871

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,773

Applicant(s)

MATSUMOTO, YOSHIIE

Examiner

Thoi V Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 10, 11 and 22-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-30 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 10 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the Amendment, Paper No. 8, filed August 26, 2002.

Accordingly, claim 1 was amended, claims 6, 8, 9, and 12-21 were cancelled, and new claims 22-30 were added. Currently, claims 1-5, 7, 10, 11 and 22-30 are pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Oates (USPN 3,960,534).

As shown in Figs. 1-6, Oates discloses a method for connecting display panel substrates comprising the steps of (col. 2, line 29 through col. 3, line 63):

(1) aligning the positions of and holding a first substrate 14 and a second substrate 12 whereon sealant material 46 is disposed so as to form a waste region in the inner side region of the edges of the first and second substrates;

(2) inserting a spacer 50 having a thickness substantially equal to a prescribed cell gap in said waste region between said first and second substrates (col. 2, lines 58-65 and Figs. 2-6);

(3) setting said cell gap by pressing said first and second substrates (col. 3, lines 33-50);

(4) hardening said sealant material (col. 3, lines 40-52); and

(5) withdrawing said spacer (col. 3, lines 56-63),

wherein the hardening of said sealant material is performed by heating (col. 3, lines 40-52).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oates (USPN 3,960,534) as applied to claims 1 and 11 above in view of Ishihara et al. (USPN 5,263,888).

Oates discloses a method for connecting display panel substrates that is basically the same as that recited in claims 2 and 3 except for performing the connection inside an air-tight processing chamber. As shown in Figs. 3(a) and 3(b), Ishihara et al. discloses a method for connecting display panel substrates in an air-tight processing chamber 7, comprising a further step of evacuating said processing

chamber from normal pressure to vacuum pressure is included between said step (1) and said step (2) above (col. 4, lines 55-61).

The connecting method for display panel substrates of Ishikawa further comprises, between said step (2) and said step (3), a step of returning said processing chamber in a vacuum state to normal pressure whilst maintaining a pressure difference of substantially zero between the expected cell interior space of said processing chamber and the space outside said expected cell interior space (col. 4, lines 61-66).

Ishihara et al. also discloses that the hardening of a sealant material is performed by irradiation of ultraviolet light (col. 5, lines 31-34).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method for connecting display panel substrates of Oates with the teaching of Ishihara et al. by performing the connection of the substrates inside an air-tight processing chamber so as to achieve a very high accuracy of mutual positioning of two substrates of a liquid crystal display panel (col. 2, lines 48-54).

7. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oates (USPN 3,960,534) as applied to claims 1 and 11 above in view of Murouchi et al. (USPN 6,036,568).

Oates discloses a method for connecting display panel substrates that is basically the same as that recited in claims 4 and 5 except for faying the first and second substrates on first and second surface tables. As shown in Figs. 3, 23(a)-23(b), Murouchi et al. discloses a method for connecting display panel substrates wherein a

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first substrate 1 and a second substrate 2 are respectively fayed with and held on and second surface tables 6 and 7 by vacuum pumps 18, 12 (col. 5, lines 29-49) so as to provide a display without making scars the substrates (col. 1, line 66 through col. 2, line 2). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Oates with the teaching of Murouchi et al. by having the first and second substrates fayed with and held on first and second surface tables to prevent the substrates from fine scars which results in bad picture quality.

Finally, with respect to claim 5, if said connection is performed inside a processing chamber, it is obvious that the air suction power for evacuating said processing chamber as a whole is less than the air suction power for faying said first and second substrates to prevent the substrates from deflecting from the surface tables and hence to achieve accurate positioning of the substrates.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oates (USPN 3,960,534) as applied to claims 1 and 11 above in view of Wakita et al. (USPN 5,307,190).

Oates discloses a method for connecting display panel substrates that is basically the same as that recited in claim 7 except for a tapered block-shaped spacer element whose thickness varies at constant rate. As shown Fig. 6, Wakita et al. discloses a method for connecting display panel substrates wherein the peripheral edges of upper substrate 1 and those of lower substrate 2 are regularly spaced by wedges 61 (col. 7, lines 27-29). Thus, it would have been obvious to one having

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ordinary skill in the art at the time the invention was made to modify the method of Ishihara et al. with the teaching of Wakita et al. by employing a tapered block-shaped spacer element whose thickness varies at constant rate for adjusting the cell gap.

Allowable Subject Matter

9. Claims 22-30 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

Re claims 6, 8 and 9, none of the prior art of record discloses, in combination with other limitations as claimed, a spacer having a plurality of spacer elements layered together in a mutually separable fashion or a spacer having an additional auxiliary spacer element appended to said spacer for adjusting the cell gap.

The most relevant references, USPN 5,263,888 of Ishikita et al. (US'888) and USPN 5,307,190 of Wakita et al. (US'190), fail to disclose or suggest a spacer having an additional auxiliary spacer element or a plurality of spacer elements for adjusting the cell gap during manufacturing process. The US'888 only discloses an assembly spacer member for initially spacing the two substrates. Meanwhile, the US'190 discloses using wedges for regularly spacing the cell gap.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong
12/22/2003


T. Chowdhury
Primary Examiner